

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph bridging pages 2-3 of the specification with the following amended paragraph:

The present invention provides a method of purifying a treatment target substance comprising carrying out a removing treatment of a fluorine-containing surfactant by bringing the above treatment target substance containing the above fluorine-containing surfactant into contact with a substance-[A] B, wherein the above substance-[A] B is a gas under standard conditions (10^5 Pa, 0°C).

Please replace the third full paragraph on page 3 of the specification with the following amended paragraph:

The invention further provides a method of producing an aggregate for the production of the aggregate comprising a polymer, which comprises the step of carrying out a coagulation treatment of an aqueous dispersion by bringing the above aqueous dispersion in which a particle comprising the above polymer is dispersed into contact with an substance-[A] B, the above substance-[A] B being a gas under standard condition (10^5 Pa, 0°C).

Please replace the fifth full paragraph on page 3 of the specification with the following amended paragraph:

The method of purifying a treatment target substance according to the invention comprises carrying out a removal treatment of a fluorine-containing surfactant by bringing the treatment target substance containing the fluorine-containing surfactant into contact with a substance-[A] B.

Please replace the paragraph bridging pages 3-4 of the specification with the following amended paragraph:

The treatment target substance is the target to be brought into contact with the substance ~~[A]~~B in the above removal treatment. In the following, when a water-containing substance taken as an example of the treatment target substance is described, it is only required that the substance satisfy the requirements contained in the description only at least at the time of starting contacting with the substance-~~[A]~~B. The treatment target substance may be a solid or a liquid at ordinary temperature and pressure (e.g. 20°C and 10⁵ Pa).

Please replace the second full paragraph on page 9 of the specification with the following amended paragraph:

The above-mentioned aqueous nondispersion or wet powder is preferred as the treatment target substance (1) from the fluorine-containing surfactant removal efficiency viewpoint. In the aqueous nondispersion or wet powder, the polymer particles with the fluorine-containing surfactant adhering thereto generally has a narrowed surface area as compared with the aqueous dispersion as a result of coagulation, for instance. Therefore, supposedly, the fluorine-containing surfactant, upon contacting with the substance-~~[A]~~B, readily migrates to the substance-~~[A]~~B side, resulting in an increased rate of extraction of the fluorine-containing surfactant, hence in good removal efficiency.

Please replace the third full paragraph on page 9 of the specification with the following amended paragraph:

When supercritical carbon dioxide, for instance, is used as the substance-~~[A]~~B, as described later herein, the treatment target substance (1) can be efficiently deprived of the fluorine-containing surfactant, for example, by blowing supercritical carbon dioxide into the wet

powder obtained, for example, by coagulation and filtration of the aqueous dispersion (1), followed by rough draining of the water (aqueous medium). Under certain water content and other conditions, it is also possible to remove the surfactant in question substantially completely. The conventional drying step following coagulation is no more necessary, and this leads to process simplification as well.

Please replace the first full paragraph on page 12 of the specification with the following amended paragraph:

The treatment target substance to be treated by the method of purifying the treatment target substance according to the invention is constituted of (i) water and (ii) a nonwater component other than water containing the fluorine-containing surfactant, and the nonwater component (ii) may further contain a polymer or contain no polymer, and the water (i) is preferably in an amount of more than 0.1 part by mass per 100 parts by mass of the nonwater component (ii). An excessively small or large amount of water tends to render the removal of the fluorine-containing surfactant unsatisfactory. A more preferred lower limit is 100 parts by mass, and a still more preferred lower limit is 400 parts by mass. Within the above range, an upper limit to the amount of water (i) which is preferred from the fluorine-containing surfactant removal efficiency viewpoint may be set at 10^{12} parts by mass, although it may vary depending on the amount of the substance-~~[A]~~B to be contacted therewith.

Please replace the first full paragraph on page 13 of the specification with the following amended paragraph:

The method of purifying the treatment target substance according to the invention comprises carrying out a removal treatment of a fluorine-containing surfactant by bringing the above-mentioned treatment target substance into contact with a substance-~~[A]~~B.

Please replace the third full paragraph on page 13 of the specification with the following amended paragraph:

The removal treatment of the fluorine-containing surfactant is carried out by bringing the treatment target substance into contact with the substance-[A]B. The fluorine-containing surfactant is dissolved and extracted in and with the substance-[A]B and separated, together with the substance-[A]B, from the treatment target substance now treated and thus removed from the treatment target substance now treated. The method of removal treatment of the fluorine-containing surfactant is not particularly restricted but, in the case of the treatment target substance (1) or treatment target substance (3), for instance, the treatment may be carried out using a batch system such as the one schematically shown in Fig. 1, or a semi-flow system in which the substance-[A]B is separated from the fluorine-containing surfactant after extraction of the same with the substance-[A]B and is again used for the removal treatment. The treatment target substance (2) such as a wet resin or elastomer powder may be treated within an extruding machine.

Please replace the fourth full paragraph on page 13 of the specification with the following amended paragraph:

The substance-[A]B is a gas under standard condition (10^5 Pa, 0°C).

Please replace the second full paragraph on page 14 of the specification with the following amended paragraph:

As the substance-[A]B, there may be mentioned, among others, ethane, propane, dinitrogen monoxide, ammonia, fluoroform and other fluoro(hydro)carbons, and carbon dioxide. Among them, carbon dioxide is preferred since it is chemically stable, inexpensive and can realize a supercritical condition at relatively low temperature and pressure.

Please replace the paragraph bridging pages 14-15 of the specification with the following amended paragraph:

When carbon dioxide is used as the substance-[A]B, the removal treatment of the fluorine-containing surfactant may be carried out by contacting with carbon dioxide at a treatment temperature and a treatment pressure at which carbon dioxide is gaseous. From the productivity or efficiency viewpoint, however, the contacting is preferably carried out at a temperature not lower than 20°C and a pressure not lower than 4 MPa, more preferably at a temperature not lower than the critical temperature of carbon dioxide and at a pressure not lower than the critical pressure of carbon dioxide. The critical temperature of carbon dioxide is 31.1°C and the critical pressure is 7.38 MPa. When carbon dioxide in a supercritical state is used as the substance-[A]B, the removal treatment of the fluorine-containing surfactant is preferably carried out at a temperature not higher than 230°C, preferably lower than 150°C, and a pressure not higher than 60 MPa, more preferably at a temperature lower than 150°C, preferably lower than 130°C, and a pressure not higher than 40 MPa.

Please replace the first full paragraph on page 15 of the specification with the following amended paragraph:

When the removal treatment of the fluorine-containing surfactant is carried out using carbon dioxide in a supercritical state as the substance-[A]B, the fluorine-containing surfactant removal efficiency can be improved by increasing the density of carbon dioxide. Although this mechanism is not clear, it is supposed that the solubility of such a fluorine-containing surfactant as APFO increases with the increase in density of carbon dioxide.

Please replace the first full paragraph on page 17 of the specification with the following amended paragraph:

The aggregate-producing method (1) of the invention is the method for producing an aggregate comprising a polymer (hereinafter referred to as “polymer aggregate”) comprising carrying out the above-mentioned removal treatment of the fluorine-containing surfactant by contacting the treatment target substance (1) or treatment target substance (2) with the above-mentioned substance-~~[A]~~B. Like in the method of purifying the treatment target substance of the invention, carbon dioxide is preferred as the substance-~~[A]~~B.

Please replace the fourth full paragraph on page 22 of the specification with the following amended paragraph:

The method of preparing a fluorine-containing-surfactant-reduced water according to the invention comprises preparing the fluorine-containing-surfactant-reduced water reduced in fluorine-containing surfactant content using the above-mentioned method of purifying the treatment target substance. The above-mentioned method of the fluorine-containing-surfactant-reduced water reduced in fluorine-containing surfactant content can be applied to the treatment target substance (3) in the method of purifying the treatment target substance mentioned above. The fluorine-containing-surfactant-reduced water have a reduced fluorine-containing surfactant content as a result of the removal treatment of the fluorine-containing surfactant thereof which comprises contacting that substance (3) with the above-mentioned substance-~~[A]~~B.

Please replace the first full paragraph on page 23 of the specification with the following amended paragraph:

By the method of preparing the fluorine-containing-surfactant-reduced water according to the invention, it is possible to recover the fluorine-containing surfactant removed from the

treatment target substance by separating the same from the substance-[A]B, as mentioned hereinabove referring to the method of purifying the treatment target substance according to the invention.

Please replace the first full paragraph on page 24 of the specification with the following amended paragraph:

The method of producing an aggregate according to the invention is a method for the production of the aggregate comprising a polymer, and the above method of producing an aggregate comprises the step of carrying out a coagulation treatment of the above aqueous dispersion by bringing an aqueous dispersion containing a particle comprising the polymer dispersed therein into contact with an substance-[A]B. Hereinafter, the method of producing the aggregate of the invention which comprises the step of carrying out the above coagulation treatment is sometimes referred to as “aggregate-producing method (2)” of the invention.

Please replace the second full paragraph on page 24 of the specification with the following amended paragraph:

The substance-[A]B is a gas under standard condition (10^5 Pa, 0°C) and is the same one as the substance-[A]B described hereinabove referring to the method of purifying the treatment target substance of the invention. Preferably, it is carbon dioxide.

Please replace the third full paragraph on page 24 of the specification with the following amended paragraph:

The “aqueous dispersion containing a particle comprising the polymer dispersed therein” is preferably an aqueous dispersion comprising primary polymer particles dispersion in an aqueous medium. The method of “bringing into contact with substance-[A]B” is the same as the method of bringing the treatment target substance (1) into contact with the substance-[A]B in the

above-mentioned method of purifying the treatment target substance of the invention, and the above-mentioned aqueous dispersion comprising primary particles dispersed in an aqueous medium is preferably used as the treatment target substance (1).

Please replace the first full paragraph on page 25 of the specification with the following amended paragraph:

The particles comprising the polymer dispersed in the aqueous dispersion, when brought into contact with the substance-[A]B, can coagulate to form polymer aggregates. When the aqueous dispersion is one containing a fluorine-containing surfactant, it is presumable that the particles comprising the polymer dispersed in the aqueous dispersion, on the occasion of contacting of the treatment target substance (1) with the substance-[A]B, are reduced in dispersing force in the aqueous dispersion as a result of the reduction in fluorine-containing surfactant content in the aqueous dispersion upon such contacting, hence the particles flock together to form aggregates.

Please replace the second full paragraph on page 26 of the specification with the following amended paragraph:

In carrying out the aggregate producing method of the invention, the coagulation treatment of the aqueous dispersion is preferably carried out at a specific treatment temperature ($T^{\circ}\text{C}$) and at a specific treatment pressure ($P\text{ Pa}$), and the ratio (T/T_c) between the specific treatment temperature ($T^{\circ}\text{C}$) and the critical temperature [$T_c^{\circ}\text{C}$] of the substance-[A]B is preferably not lower than 0.8 and the ratio (P/P_c) between the specific treatment pressure ($P\text{ Pa}$) and the critical pressure ($P_c\text{ Pa}$) of the substance-[A]B is preferably not lower than 0.8.

Please replace the paragraph bridging pages 26-27 of the specification with the following amended paragraph:

More preferably, the specific treatment temperature (T) is not lower than the critical temperature (T_c) of the substance ~~[A]~~B and the specific treatment pressure is not lower than the critical pressure (P_c) of the substance ~~[A]~~B. When carbon dioxide in a supercritical condition is used as the substance ~~[A]~~B, the upper limit is preferably set at the same level as mentioned hereinabove referring to the method of purifying the treatment target substance of the invention.